



OPERATING INSTRUCTIONS FOR **Compact 6 Drilling Machine**

- 1. Machine to be operated by trained personnel.**
- 2. Instructions to be read before use.**

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Hy-Ram Compact 6



Description	Application	Cutter Sizes	Flange Sizes
Hy-Ram C6 Drilling Machine	Water or Gas Pipes* - Makes up to 6" Branch connections (Up to 140mm diameter hole).	70, 83 and 140mm (standard)	80, 100 and 150mm (standard)

* Specify which option when ordering

Holesaw Cutters & Pilot Drills

Product code	Description
117-000032	70mm Bi-Metal Holesaw Cutter
117-000033	83mm Bi-Metal Holesaw Cutter
117-000049	140mm Bi-Metal Holesaw Cutter
117-000099	70mm Carbide Tipped Holesaw Cutter
117-000100	83mm Carbide Tipped Holesaw Cutter
117-000126	140mm Carbide Tipped Holesaw Cutter
130-000072	6mm Dia. Pilot Drill (70 & 83mm Holesaws)
130-000070	6mm Dia. Pilot Drill (140mm Holesaw)
130-000201	10mm Dia. Pilot Drill (70 & 83mm Holesaw)
130-000202	10mm Dia. Pilot Drill (140mm Holesaw)
130-000199	Coupon Retaining Pilot Drill - C6 (70 & 83mm Holesaws)
130-000198	Coupon Retaining Pilot Drill - C6 (140mm Holesaw)

Bottom Sampling Accessories

Additional accessories for use when bottom sampling with HI-Flow drilling saddles, on sizes 6" and above.

Product code	Description
300-000135	Cutter Adaptor Plate
300-000134	Cutter Adaptor
117-000039	57mm Holesaw Cutter (Std.)
117-000093	57mm Holesaw Cutter (Carbide.)
130-000175	10mm Pilot Drill
130-000174	C6/LR67 Coupon retaining pilot drill

Hy-Ram C6 Drilling Machine & Accessories

Compact, lightweight hand operated Underpressure Branch Drilling Machine for 'live' drilling into Water and Gas lines. The C6 drills through a gate valve and is supplied as standard with 3 x 'screw-on' Flanges to suit 80, 100 and 150mm NP16 Flanged Water Valves. Cutters are available for both metallic and plastic pipes.

Ref	Product code	Description	
	130-000064	C6 Complete Kit **	Ⓡ Ⓜ
Kit Includes			
A		C6 Drilling Machine	
B	640-000021	150mm Spacer	
C	640-000020	100mm Spacer	
D	640-000019	80 mm Spacer	
E	643-000053	Ratchet Handle	
F	270-000053	Allen Key 3mm	
G	270-000033	Allen Key 6mm	
H	711-000017	30mm Open Ended Spanner	
I	023-000041	½" Tommy Bar	
J	130-000201	10mm Dia. Pilot Drill - C6 (70 & 83mm Holesaw's)	
K	130-000202	10mm Dia. Pilot Drill - C6 (140mm Holesaw)	
L	300-000041	Cutter Drive Adaptor (for 140mm Cutter)	
M	300-000115	Cutter Drive Adaptor (for 70 and 83mm Cutters)	
N	045-000073	Strong Steel Box	
O	711-000016	Ratchet Spanner	
P	643-000151	Drill Spindle	
Q	310-000012	80mm Flange	
R	310-000014	100 mm Flange	
S	310-000021	150mm Flange	

** Standard Kit includes all accessories above apart from Holesaw Cutters



Additional Gas Accessories

Facilitates the use of the drill on gas type Knife gate valves.

Product code	Description
640-000019	80mm Spacer
640-000020	100mm Spacer
640-000021	150mm Spacer
640-000033	Spacer Spigot 80mm NP16
640-000034	Spacer Spigot 100mm NP16
640-000035	Spacer Spigot 150mm NP16

Other accessories include:

PE Holesaw Cutters	
Product Code	Description
117-000258	44mm Carbide Tipped PE Holesaw Cutter
117-000259	57mm Carbide Tipped PE Holesaw Cutter
117-000260	67mm Carbide Tipped PE Holesaw Cutter
117-000237	70mm Carbide Tipped PE Holesaw Cutter
117-000238	83mm Carbide Tipped PE Holesaw Cutter
117-000239	140mm Carbide Tipped PE Holesaw Cutter



Hiram recommend that a pressure test is completed prior to the use of the compact 6 drilling machine. The following test pumps are available for hire and purchase.

Hydrostatic Test Pumps



Rothenberger RP50 Pump

Pressure testing pump for carrying out hydrostatic pressure tests on water pipework systems.

Maximum Pressure: 60 bar.

Tank capacity: 12 litres

Connection: ½" BSPT

Product code	Description	
652-000015	RP50 Pressure Test Pump	(R) (H)
161-000161	Replacement Gauge	

Virax 262030 Pump

Pressure testing pump for carrying out hydrostatic pressure tests on water pipework systems.

Maximum Pressure: 50 bar.

Tank capacity: 5 litres

Connection: ½" BSPT

Product code	Description	
652-000033	Virax Pressure Test Pump	(R) (H)
161-000129	Replacement Gauge	

This unit is design and manufactured by Hynam Engineering Co Ltd.
Hy-Ram Engineering Co Ltd has a policy of continuous improvement in product quality and design. Hy-Ram Engineering Co Ltd therefore reserves the right to change the specification of its models at any time, without prior notice.

Important!

This manual forms a part of the product to which it relates. It should be kept for the life of the product. Any amendments issued by Hy-Ram Engineering Co Ltd should be incorporated in the text. The manual should be passed to any subsequent holder or user of this product.

Safety Information

The Hy-Ram Compact 6 Drilling Machine should only be used by trained and competent operators.

As an operator, always ensure that you fully understand how the equipment functions and that you are fully aware of the dangers. Always wear the necessary protective clothing including adequate eye protection, hard hat, gloves, overalls, protective boots etc.



Prior to commencing work, always ensure that the drill kit is complete and fully serviceable. If in doubt replace.

The Machine operation:

1. Secure Under-pressure Tee onto pipe and ensure that it is tight. (Follow manufacturers fitting instructions with regard to torque values etc.).
2. Assemble RS Gate Valve/Gasket to the Under-pressure Tee again making sure that the Nuts/Bolts are tight. Ensure RS Valve is in the 'Shut' Position
3. Assemble Holesaw Cutter and pilot Drill onto the Drill spindle of the C6 Machine. Ensure diameter of cutter is fit for purpose for the application and ensure it will fit through RS Gate Valve with ease. (I.e. 140mm cutter through DN150 Valve.).
4. As a precaution; measure the distance from the top of the RS Gate Valve to the top of the flange and compare this with the depth required for the cutter/pilot assembly on the drill spindle. If extra clearance is required between the RS Valve and flange of the C6 use a suitable flanged Spacer - (provided).

(Note! This is only normally required for Gas applications where the Valves tend to have shorter flange to flange dimensions.)

5. Open RS Gate Valve.
6. Ensure flange assembled onto the bottom of the C6 is compatible with the flange on the RS Gate Valve - change C6 flange as required.
7. Assemble C6 onto the valve using suitable Gasket and Boltset.
8. Ensure that the Drilling Machine is assembled to the Tee 'Square'. I.e. tighten bolts equally.
9. Connect Hydrostatic Test Pump to port on Drilling Machine. Bleed air back through pump. After bleeding, pressure test to approx. 1 1/2 times mains pressure. Check for leakage.
10. Disconnect Hydrostatic Test Pump.
11. Begin to Drill. Operate Ratchet Spanner and Feed Screw.
12. Apply force by rotating the handwheel clockwise to load the spring, then operate ratchet spanner. As load diminishes, again turn handwheel clockwise to reload.
13. Keep repeating this loading and ratcheting sequence until hole is drilled.

DO NOT APPLY EXCESSIVE PRESSURE WITH THE HANDWHEEL. LET THE PILOT DRILL AND CUTTER DO THE WORK! 95% OF FAILED DRILLINGS ARE DUE TO OPERATOR ERROR. EXCESSIVE PRESSURE (RESULTING IN HOLES AW DAMAGE) IS THE MOST COMMON PROBLEM.

14. Whilst drilling, periodically open the Thumb valve (where the Hydrostatic Test Pump was connected) to 'jet' water out. This has the effect of clearing the swarf. Also whilst drilling the operator must periodically 'feel' the cutter and 'back-off' to allow swarf to clear.
15. The operator should feel when drilling is complete and the cutter has broken through into the main. This can be confirmed by rotating the feedscrew a couple of turns without resistance. Once drilling is complete, retract the Feedscrew.
16. Once the operator is certain that the Cutter is fully retracted and clear/above the valve plate area' shut the Valve .
17. Once the Valve is shut, operate the Thumb Valve on the Drilling Machine to relieve internal pressure. The Drilling Machine can then be removed.

Certificate of Calibration.

- This product has been inspected and tested in accordance with the ISO9001 quality control systems and procedures in place at Hynam Engineering Co Ltd.
- This product has no calibration period, periodic, safety inspections should be carried out by the operator if in any doubt please contact the manufacturer for further information

Decommissioning & Disposal Instructions

These give the instructions for decommissioning and disposal of the equipment and confirm how it is to be taken out of service safely, in respect of the Essential Health and Safety Requirements.

- If a Hynam tool has reached the end of its useful working life and cannot be refurbished it must be disposed of through a licensed scrap or waste disposal facility. Alternatively, a reverse engineering company could be used to strip the equipment for recycling purposes.
- Disposal is the responsibility of the Customer this can also be achieved by returning the product back to the manufacturer.



Warranty Information.

1. Extent of Warranty.
 - (a) Hy-Ram Engineering Co Ltd warrants to the end-user customer that its products will be free from defects in materials and workmanship, for six months after the date of purchase by the end-user customer, subject to providing proof of purchase.
 - (b) If Hy-Ram Engineering Co Ltd receives, during the warranty period, notice of a defect in product which is covered by this warranty, Hy-Ram Engineering Co Ltd shall either repair or replace the product, at its option. Any replacement product may be either new or like-new, provided that it has functionality at least equal to that of the product being replaced.
 - (c) All warranty work will be carried out by Hy-Ram Engineering Co Ltd unless otherwise agreed. On-site warranty and repair or replacement services are available from authorised Hy-Ram Engineering Co Ltd service facilities world-wide.
 - (d) Customers shall prepay shipping charges for products returned to Hy-Ram Engineering Co Ltd for warranty service, and Hy-Ram Engineering Co Ltd will charge for return of the products back to the customer.
 - (e) This warranty statement gives the customer specific legal rights. The customer may also have other rights which vary from country to country in the world.

Pre-conditions for Warranty Application.

Hy-Ram Engineering Co Ltd' warranty covers only those defects which arise as a result of normal use of the product, and this warranty shall only apply in the following circumstances:

- (a) All the instructions contained in the operating manual have been complied with
- (b) And none of the following apply:
 - (i) Improper or inadequate maintenance;
 - (ii) Physical abuse;
 - (iii) Unauthorised modification, misuse or any use not in accordance with the operating manual and good industry practice;
 - (iv) Operation outside the products specifications;
 - (v) Improper site preparation or maintenance; and
 - (vi) Faulty pipe or fittings.

Limitations of Warranty.

- (a) Hy-Ram Engineering Co Ltd does not warrant the operation of any product to be uninterrupted or error free.
- (b) Hy-Ram Engineering Co Ltd makes no other warranty of any kind, whether express or implied, with respect to its products. Hy-Ram Engineering Co Ltd specifically disclaims the implied warranties of satisfactory quality and fitness for a particular purpose.
- (c) To the extent that this warranty statement is inconsistent with the law of the locality where the customer uses the product, this warranty statement shall be deemed modified by the minimum necessary to be consistent with such local law.
- (d) To the extent allowed by local law, the remedies provided in this warranty statement are the customer's sole and exclusive remedies.
- (e) This tool has been designed for the range of fittings available at the time of its design and development. Hy-Ram Engineering Co Ltd can accept NO liability for the unit's ability or otherwise to work with new or different fittings that subsequently appear in the market place.

Please complete this information and keep it safely with your proof of purchase receipt.
You will require it for any warranty claim.

Where purchased

Date of purchase

Name & address
Of purchaser

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Type of tool

Serial number

For Service and repair please contact:

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